

M.P. NAYAR*: Notes on Asian Melastomataceae (1)

Notes on the genus *Phyllagathis* Bl.

M.P. ナヤール: アジア産ノボタン科植物考察 (1)

Phyllagathis 属について

Blume (1831) described the genus *Phyllagathis* on the basis of type species *Phyllagathis rotundifolia* from Sumatra. According to Blume the genus has tetramerous flowers with 8 equal stamens, arcuate and rostrate anthers with inappendiculate base. Naudin (1851), Miquel (1855), Benthams & Hooker (1865), Triana (1871), and Cogniaux (1891) accepted Blume's circumscription of the genus. Stapf in Hook., Ic. Pl. 23: t. 2279 & 2280 (1894) deviated from Blume's generic conception by describing *P. elliptica* and *P. uniflora* which both have distinct dorsal spur and oblong anthers. Diels (1932) widened the generic concept by describing *Phyllagathis ellatandra* which has 4 fertile and 4 staminodial stamens. While Guillaumin (1913) described *Phyllagathis hirsuta* Guillaum. (= *P. guillauminii* Li) which has a prominent dorsal connective appendage and lanceolate leaves. Li (1944) described *P. setotheca* from S. China which has oblong-lanceolate leaves and distinctly setose dorsal connective. More anomalous species (e.g. *P. anisophylla* Diels and *P. oligotricha* Merr. ex Merr. & Chun) not conforming to Blume generic limits of *Phyllagathis* were described and thus further increased the confusion.

Bakh. f. (1943) suggested that Stapf's species *P. uniflora* and *P. elliptica* may be considered as a basis of a new genus. If the generic concept of *Phyllagathis* is broadened to include all the species of *Phyllagathis* known at present it would be a most heterogeneous mixture with different types of staminal appendages. There would be difficulty in concisely separating such a broadly delimited genus from the allied genera *Fordiophyton*, *Stapfiophyton* and *Bredia*. Hence it is proposed to delimit the genus *Phyllagathis* on the basis of its 4 or 8 equal or subequal stamens possessing dorsally a minute tubercle on prominent spur and ventrally inappendiculate or minutely

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2-tuberculate. Bakh. f. (1943) indicated the absence of a disc in *Phyllagathis*. On careful scrutiny it is seen that in all species of *Phyllagathis*, an ovarial disc is present in a pronounced or rudimentary form.

1. ***Phyllagathis gigantifolia*** Nayar, sp. nov.

Herba, $\frac{1}{2}$ -1 m alta; caulis valde angularis, incrassatus, puberulus. Folia elliptico-oblonga vel ovato-oblonga, 28-38 cm \times 15-18 cm basi rotundata, apice abrupte acuminata, margine integra, supra et subtus velutina, 7-9 nervia, nervis principalibus subtus manifestis, nervis transversalibus parallelis, numerosis, distinctis; petiolus 6-9 cm longus, puberulus, dorso canaliculatus, breviter alatus. Inflorescentia terminalis, paniculata, longe pedunculata, glabrata; pedunculus 15-33 cm longus; pedicellus 2-4 mm longus. Calycis tubus campanulatus, 3-3.5 mm longus; glaber, 8-costatus, limbus 4-dentatus, dentibus 0.5 mm longis. Petala 4, ovato-oblonga, 5-6 mm \times 2.5-3 mm. Stamina 8, filamentis 3.5 mm longis, antheris 4 mm longis, linearibus acuminatis, connectivo basi inappendiculato. Stylus filiformis, 8-10 mm longus, glaber, stigmatum punctiformi.

Borneo. Sarawak: Mt. Duilt, Ulu Koyan, alt. c. 800 m, 16 Sept. 1932. Synge S. 491 (Holotype K); Ibid, 25 Jun. 1932, Richards 2057 (K).

P. gigantifolia is unique in the genus *Phyllagathis* in having the characteristic prominently veined, velutinous large leaves (28-38 cm \times 15-18 cm).

2. ***Phyllagathis beccariana*** (Cogn.) Nayar, comb. nov.

Allomorpha beccariana Cogn. in DC., Monogr. Phan. 7: 467 (1891).

Borneo. Sarawak, *Beccari* 495 (Isotype K).

In the nature of its habit, calyx tube and stamens, this taxon should be assigned to the genus *Phyllagathis*. This is allied to *P. peltata* Stapf but differs in having non ciliate undersurface of leaf, membranous leaves and smaller scape. In *P. beccariana* the nerves on the undersurface of the leaf is furfuraceous and leaves membranous; whereas in *P. peltata* the leaves are coriaceous and the leaf nerves are setose. In *P. beccariana* the peltate nature is seen in one or two leaves and there are various stages in the development towards the peltate condition.

3. ***Phyllagathis sarawakensis*** Nayar, sp. nov.

Herba perennis. Caulis angularis, puberulus, ad nodos dense setosus, setis 5-7 mm longis. Folia ovato-lanceolata, 12-16 cm \times 5-7 cm, basi rotundata vel subcordata, apice acuminata, margine ciliata, supra glabra, subtus ad

nervos dense setosa, supra in sicco viridia, subtus pallide viridia, 7-nervia, nervis principalibus subtus prominentibus, nervulis transversalibus parallelis numerosis distinctis, coriacea; petiolus 7-11 cm longus, puberulus, in sicco conspicue longitudinaliter striatus, setosus, setis 6-8mm longis. Inflorescentia axillaris, 14-17 cm longa; pedunculus juvenilis sparse puberulus; glaber; pedicellus 3-4.5 mm longus. Calycis tubus campanulatus, 4-4.5 mm longus, glaber, limbus 4-lobatus, lobis triangularibus 0.8 mm longis. Petala 4, ovato-oblonga, 1.8 mm × 1.5-1.8 mm, glabra. Stamina 8, aequalia, filamentis 3 mm longis, antheris 3.5 mm longis, linearibus, connectivo postice breviter calcarato, connectivo in parte ventrali in auriculas duas minutas exeunte. Stylus 8-10 mm longus, filiformis, gracilis glaber, stigmatibus punctiformi. Capsula 3.5 mm × 3.5-4 mm, glabra, 4-costata.

Borneo. Sarawak: Gat, Upper Rejang River, J. & M.S. Clemens 21586 (Holotype K).

This species has a superficial resemblance to King's *Phyllagathis hispida* of Malaya. However, *P. sarawakensis* could be easily distinguished by its smaller flowers, densely setose undersurface of the leaf. In *P. hispida* the flowers are arranged in pseudo-umbels at the tip of the peduncle; whereas in *P. sarawakensis* the scorpioid cymes are arranged in the form of a spike.

4. *Phyllagathis elliptica* Stapf in Hook., Ic. Pl. 23: t. 2279 (1894).

Borneo. Sabah: Mt. Kinabalu, alt. 1333 m, *Haviland* 1286 (Type K); *Ibid.*, Penibuken ridge, alt. 1166 m, 27 Sept. 1933, *Clemens* 51577 & 51338 (K); Ulu Liwagu and Ulu Mesilau, alt. 1666 m, 23 Aug. 1961, *Chew, Corner and Stainton* 2876 (K); Pinosuk Plateau, Sungei Bembangan, alt. 1666 m, 17 Aug. 1961, *RSNB* No. 1312 (K).

Stapf's illustration (l.c.) of the calyx tube is wrong since the calyx lobes are not divided or segmented. On examining the specimens it is seen that the calyx lobes are setose.

5. *Phyllagathis brookei* Nayar sp. nov.

Herba ramosa. Caulis leviter corsatus, dense setoso-hirsutus. Folia elliptico-rotundata, vel elliptica, 2-2.5 cm × 1.8-2.3 cm, basi rotundata vel subcordata, apice subrotundata vel obtusa, margine ciliata supra et subtus setoso-hirsuta, subtus ad nervos dense furfuraceo-setosa, 5-7 nervia, subtus venulis transversis distinctis, reticulata; petiolus 6 mm-13 mm longus, dense setosus et furfuraceus, setis 5-6 mm longis. Inflorescentia axillaris et ter-

minalis, 2 cm longa, 4-5 flora, dense setoso-furfuracea; pedicellus 5-7 mm longus. Calycis tubus campanulatus, 3.5 mm × 3 mm, dense setosus, setis 2.5 mm longis, limbus 4 lobatus, lobis triangularibus 1.5-2 mm × 1 mm. Petala oblonga vel oblongo-obovata, 8-9 mm × 5-6 mm. Stamina 8, aequalia, filamentis 2.5 mm longis, antheris 1.8-2 mm longis, oblongis, connectivo basi haud producto, dorso in calcar 0.2 mm longum exeunte, in parte ventrali inappendiculato. Ovarium calycis tubo septis 8 adnatum. Ovatium 4-coronatum. Stylus filiformis, 6-7 mm longus glaber, stigmatibus punctiformi. Capsula late campanulata 6 mm longa, 4-valvata.

Borneo. Sarawak: Bakelalan Bilengki, alt. 1500 m, growing on wet mossy rock, 16 Aug. 1955, *W.M.A. Brooke* 10416 (Holotype BM, Isotype L).

P. brookei is allied to *P. elliptica* but differs in having small densely setose leaves and smaller inflorescence. According to Brooke's field notes the flowers are 'handsome pink with a darker ring round the centre'.

6. ***Phyllagathis uniflora*** Stapf in Hook., Ic. Pl. 23: t. 2280 (1894).

Borneo. Sabah: Mt. Kinabalu, alt. 2166 m, *Haviland* 1172 (Holotype K); Upper Baram, Gunong Lemobok, alt. 1000 m, 6 Nov. 1920, *Moulton* 6697 (K).

Phyllagathis uniflora Stapf var. ***longiloba*** Nayar, var. nov.

Herba ad 2-4 dm alta. Caulis irregulariter angularis, dense ferrugineo pilosus. Folia valde inaequalia, majora oblanceolata vel elliptica, 5-8 cm longa, 2-3 cm lata, basi cuneata vel obliqua, apice subacuta, margine breviter denticulata, supra glabra, subtus ad nervos rufopilosa, inter nervos glabra, 5-nervia, venulis transversis distinctis, reticulata; petiolus 8-14 mm longus, dense pilosus; folia minora elliptica 5 mm-10 mm × 2.5-5 mm, supra glabra, subtus ad nervos rufopilosa; petiolus 2-3 mm longus, dense pilosus. Flores 4-meri, solitarii; pedicellus 2-3 mm longus, dense pilosus; bractae lineares 2-3 mm longae, dense pilosae. Calycis tubus campanulatus, 2.5-3 mm longus, 2.5-2.8 mm latus, 8-costatus, pilosus, limbus 4-lobatus, lobi 5.5-6 mm longis. Petala obovata, 7-8 mm longa, 6-6.5 mm lata. Stamina 8, aequalia, filamentis 5 mm longis, antheris 2.5-3 mm longis, connectivo dorso tuberculato, 0.2 mm longo, ventrali inappendiculato. Ovarium coronatum. Stylus filiformis, 7.8 mm longus, glaber, stigmatibus punctiformi.

Borneo. Sabah: Mt. Kinabalu, Ulu Langanani, alt. 1500 m, 8 Aug. 1961, *RSNB* No. 1262 (Holotype K); Ibid., Eastern shoulder, alt. 1666 m, 31 Jul. 1961, *RSNB* No. 1572 (K).

This variety differs from the type in having larger leaves (5-8 cm×2-3 cm), longer calyx lobes (5.5-6 mm long) and pubescent calyx tube; whereas in the type the leaves are smaller (3-5 cm×1-1.5 cm), shorter calyx lobes (3 mm long) and glabrate calyx.

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ノボタン科の *Phyllagathis* 属は中国南部, 東南アジアに分布し, 10数種知られている。本論文ではこの属の限界を明らかにすると共に, ボルネオ産のものを整理し, 3新種, 1新変種, 1新組合せを報告する。